

**TAXONOMY OF *STEVIA SEEMANNII* AND *S. ALATIPES*
(ASTERACEAE) WITH DESCRIPTION OF A NEW SPECIES, *S.*
ENIGMATICA, FROM AMONGST THEIR MIDST**

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ABSTRACT

The taxonomy of *Stevia seemannii* vis-à-vis *S. alatipes* is discussed in some detail, noting that Grashoff, in his seminal treatment of *Stevia* for Mexico, confused the two names, applying the name *S. seemannii* to distinct populations from southern Mexico that are better treated as the newly proposed ***Stevia enigmatica* B.L. Turner, sp. nov.** The name *S. alatipes* is believed to be a synonym of *S. seemannii*, the type from the Durango-Sinaloa border along Mexican Highway 40. A map showing the distribution of the taxa concerned is provided, along with a photograph of the holotype of *S. enigmatica*. *Phytologia* 92(3): 407-412 (December 1, 2010).

KEY WORDS: Asteraceae, Eupatorieae, *Stevia*, Mexico

Grashoff (1972) provided an exceptional, as yet unpublished, account of the Mexican species of *Stevia*. In this he recognized both *S. alatipes* B.L. Rob. and *S. seemannii* Sch.-Bip. In his discussion of the latter, he noted that it was known with certainty only from Oaxaca and Guatemala and that "Seemann's label data would support that he collected the type in or near Sinaloa where other of his collections with this same data were collected."

McVaugh (1984), in his treatment of *Stevia* for his Flora Novo-Galiciana, further commented that *S. seemannii* was typified by material (holotype, P, examined by both McVaugh and Grashoff) collected by Seemann "from the area where Durango, Sinaloa and Nayarit adjoin." He also called attention to its similarity to *S. alatipes*,

noting that it “differs from the latter in the smaller and more congested inflorescence, in which the longest peduncles are ca 5 mm long or less. The phyllaries are eglandular, ca 7 mm long; the achenes homomorphic, 3-awned, with scale-pappus 0.7 mm long, or in some buds 4- or 5-awned. The relationship to the group of *S. alatipes* needs to be investigated further.”

McVaugh summed up the matter, as follows:

Grashoff (1972), like Robinson (1930) before him, did not allude to any similarity between *S. alatipes* and *S. seemannii*, and in fact both authors separate the two rather widely in their arrangements of the genus, basing the separation chiefly on the form of the inflorescence, i.e., in general on the differences set forth in the first lead of the key to *Stevia* in this Flora. According to Grashoff, *S. seemannii* is known from modern collections only from the interior uplands of Guatemala and Oaxaca, and he assumes the type was mistakenly labeled as from the “Sierra Madre.” As far as I can ascertain, Seemann did not collect plants in Central America or Mexico between Panama and Mazatlan, so there is evidently some error or misunderstanding involved.

Nevertheless, McVaugh (1984) accepted the taxonomy of Grashoff, relegating *S. seemannii* as one of the “Doubtful” or “Excluded” taxa of *Stevia*.

In my treatment of *Stevia seemannii* for Mexico (Turner 1997) I opined that the species, “as circumscribed by Grashoff, is a discreet morphological entity, well-separated from *S. alatipes* by its shorter, eglandular peduncles, smaller leaves, etc., and that additional collections will be found between the localities concerned, the widespread-but-uncommon distribution among apomictic species of *Stevia* being a frequent phenomenon.”

In preparation of the present paper, I restudied the above problem and conclude that the type of *S. seemannii* is a form of *S. alatipes* having more congested heads and involucre lacking stipitate glands. Similar plants of *S. seemannii* occur elsewhere in Jalisco, if not

Sinaloa, from whence the type. In short, I take *S. seemannii* to be an earlier name for *S. alatipes*.

As noted in the above, Grashoff called attention to the fact that *S. seemannii* is seemingly confined to southern Mexico. The so-identified plants from this region superficially resemble *S. alatipes* (= *S. seemannii*, as defined by Grashoff), but differ in having pubescent roots. Indeed, Grashoff (1972) noted *S. seemannii* (meaning Oaxacan and Central American plants) to be "related to *S. hirsuta* and *S. seemannioides* sharing" the remarkable feature of grey-tomentose roots. All three species have leaves confined to the lower portion of the stem (thus superficially resembling *S. seemannii* of more northern regions). Such roots are not found elsewhere in the genus, to my knowledge; at least they do not occur in populations of their hypothetical relatives from northern Mexico, and it would appear that plants from southern Mexico, referred to as *S. seemannii* by Grashoff (cf. Fig. 2), belong to an alliance of taxa unrelated to *S. seemannii* proper and are perhaps deserving of a new name, which is provided below:

✓ **STEVIA ENIGMATICA** B.L. Turner, **sp. nov.** Fig 1.

Steviae seemannii Sch.-Bip. similes sed radicibus perspicue pubescentibus, capitulescentiis plus congestis, involucre glandes stipitatas carentibus, et laminis foliorum proximalium plerumque ovatis (vs rotundis).

Perennial herbs 20-60 cm high. **Mid-stems** puberulent to glabrate. **Leaves** 3-6 cm long, 1-3 cm wide, somewhat thickened; petioles 1-3 cm long, sometimes winged; blades ovate, palmately 3-5 nervate from the base, sparsely puberulent below, glabrous above, the margins revolute. **Capitulescence** an array of mostly 1-5 congested heads, the ultimate peduncles mostly 1-5 mm long. **Involucre**s mostly 7-9 mm long; bracts puberulous to nearly glabrate, the apices acuminate. **Florets** pink to purple, 6-7 mm long. **Achenes** isomorphic, the body ca 4 mm long; pappus of 3-5 awns, 6-7 mm long, below these a crown of 3-4 scales, 0.8-1.0 mm high. **Chromosome numbers**, $2n = 33, 44, 55$ (Watanabe et al. 2001, as *S. seemannii*).

TYPE: **MEXICO. OAXACA:** "Crest of ridge and steep SW facing slope 90-100 km SW of Sola de Vega along road to Puerto Escondido." 1830 m, 25 Oct 1984, *D.E. Breedlove* 62028 (Holotype: TEX)

ADDITIONAL SPECIMENS EXAMINED: **MEXICO. GUERRERO:** "42 km SW from junction with hwy 95, on the way from Chilpancingo to Filo de Caballo," 2080 m, 8 Oct 1997, *Yahara et al.* 861 (TEX). **OAXACA:** 34.5 km N from Oaxaca to Valle Nacional along Mex 175, 2300 m, 19 Nov 1997, *Yahara et al.* 1079 (TEX). "27.1 km S from JCT on Mex 190, on the way to Santa Maria Ecatepec," 1850 m, 11 Nov 1997, *Yahara et al.* 1113, 1114 (TEX). 29.4 km N of Mixtepec, on the way to Oaxaca, 1600 m, 12 Nov 1997, *Yahara et al.* 1126 (TEX). 34.8 km N of Juchatengo, on the way from Puerto Escondido to Oaxaca, 2100 m, 13 Nov 1997, *Yahara et al.* 1141 (TEX). 3.3 km SW of San Miguel el Grande, 2455 m, 28 Nov 2003, *Yahara et al.* 2843 (TEX). 3.5 km NE from JCT in Oaxaca, on the route 175 to Valle Nacional, 2140 m, 16 Nov 1995, *Yahara & Soejima* 325 (TEX).

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Fig. 1. *Stevia enigmatica*, holotype.

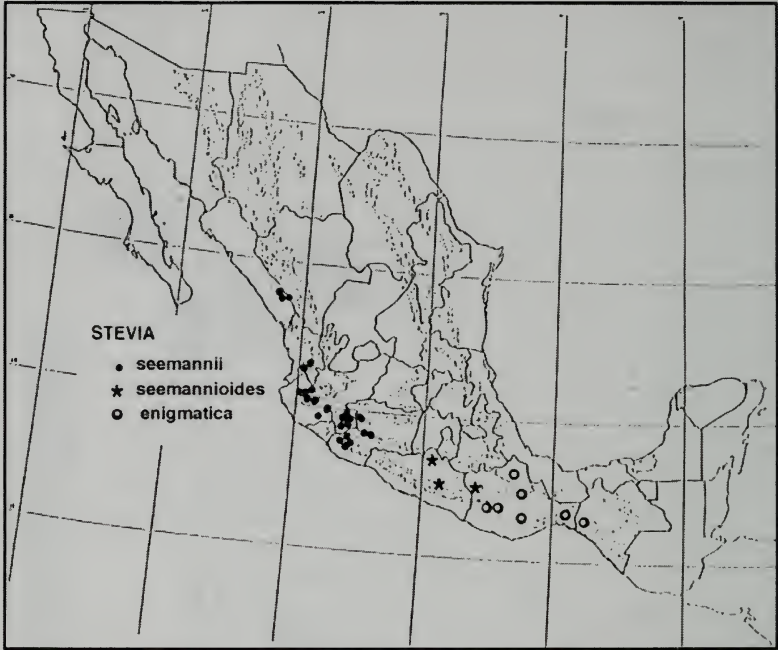


Fig. 2. Distribution of *Stevia* spp.